

**REMARKS**

In the non-final Office Action, the Examiner indicated that Applicants' claim for priority is not approved; indicated that a reference submitted with an information disclosure statement (IDS), filed February 3, 2004, does not qualify as a printed publication; objected to the drawings and the specification; rejected claims 1-39 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement; rejected claims 14, 15, 29, 30, and 33 under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim that which Applicants regard as the invention; and rejected claim 16 under 35 U.S.C. § 102(b) as anticipated by Howard et al. (Scale and Performance in a Distributed File System, February 1988).

By this Amendment, Applicants amend the specification and claims 1-4, 6, 7, 9, 14, 15, 17-20, 22, 23, 29-33, 38, and 39 to improve form. Applicants respectfully traverse the Examiner's objections and rejections under 35 U.S.C. §§ 112 and 102. Claims 1-39 remain pending.

***PRIORITY TO PROVISIONAL APPLICATIONS***

In paragraph 3 of the Office Action, the Examiner acknowledged Applicants' claim for priority based on: (1) provisional application 60/447,277 (hereinafter '277 provisional), filed February 14, 2003, and (2) provisional application 60/459,648 (hereinafter '648 provisional), filed April 3, 2003. The Examiner indicated that the inventive entity for the present application is different from the inventive entity of either of the provisional applications. The Examiner, therefore, indicated that the claim for priority is not approved. Applicants respectfully traverse the Examiner's disapproval of Applicants' claim for priority.

To claim the benefit of a provisional filing date, 35 U.S.C. § 119(e)(1) states:

An application for patent filed under section 111(a) or section 363 of this title for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in a provisional application filed under section 111(b) of this title, by an inventor or inventors named in the provisional application, shall have the same effect, as to such invention, as though filed on the date of the provisional application filed under section 111(b) of this title, if the application for patent filed under section 111(a) or section 363 of this title is filed not later than 12 months after the date on which the provisional application was filed and if it contains or is amended to contain a specific reference to the provisional application.

The Examiner appears to be misconstruing the requirement that both the utility application and the provisional application have an inventor or inventors in common as a requirement that the inventive entity be same between the utility application and the provisional application. The requirement is actually that there is at least one inventor in common between the utility application and the provisional application. M.P.E.P. § 201.11 clarifies this by stating:

The statute also requires that the applications claiming benefit of the earlier filing date under 35 U.S.C. 119(e) or 120 be filed by an inventor or inventors named in the previously filed application or provisional application. 37 CFR 1.78(a)(1) and (a)(4) require that each prior-filed application must name as an inventor at least one inventor named in the later-filed application and disclose the named inventor's invention claimed in at least one claim of the later-filed application in the manner provided by the first paragraph of 35 U.S.C. 112.<

(emphasis added).

The present application names an inventor (Sanjay Ghemawat) who is also named in both the '277 and '648 provisional applications. Therefore, the present application and the '277 and '648 provisional applications satisfy the requirement of at least one inventor in common.

Accordingly, the present application properly claims priority to both the '277 and '648 provisional applications. Acknowledgement of Applicants' claim is respectfully requested.

*INFORMATION DISCLOSURE STATEMENT*

In paragraph 4 of the Office Action, the Examiner indicated that a document submitted with the IDS, filed February 3, 2004, was not considered because the document allegedly does not qualify as a printed publication. Instead, the Examiner contends that the document is a web site ([www.inter-mezzo.org](http://www.inter-mezzo.org)). Applicants respectfully disagree.

With the IDS, filed February 3, 2004, Applicants submitted a page from the [www.inter-mezzo.org](http://www.inter-mezzo.org) web site. This page constitutes the document that Applicants want the Examiner to consider for IDS purposes. The Examiner's refusal to consider this document as allegedly not qualifying as a printed publication is not supported by any patent law.

The Examiner also refused to consider the document because the form 1449 allegedly did not list the author(s), publication source, page numbers, publication date, etc. (Office Action, paragraph 4). With the IDS, filed February 3, 2004, Applicants submitted a form 1449 that identified the title "InterMezzo," the publication source/author "[www.inter-mezzo.org](http://www.inter-mezzo.org)," and the publication date "2003." Applicants mistakenly forgot to identify that one page was being submitted. Nevertheless, the Examiner's refusal to consider this document because Applicants did not identify that a single page was being submitted is not supported by the patent laws.

Applicants respectfully request that the Examiner consider this IDS document. Applicants submit herewith, as an attachment, a copy of the IDS document and the form 1449 on which the document is cited, and a new form 1449 that lists the document and identifies the number of pages associated with the document. Applicants respectfully request that the Examiner consider the document, initial and sign one of the forms 1449 as appropriate, and return a copy of the form 1449 to Applicants with the next communication.

*OBJECTION TO THE DRAWINGS*

In paragraph 5 of the Office Action, the Examiner objected to the drawings for various alleged informalities. Applications respectfully traverse the objection.

In paragraph 5(a) of the Office Action, the Examiner objected to the drawings under 37 CFR 1.83(a) for allegedly not showing every feature of the invention specified in the claims. The Examiner alleged that the features "record" and "master" are not shown in the drawings (Office Action, paragraph 5(a)). The Examiner admitted that the drawings do show a "record" and "master," but alleged that the drawings do not show the scope of what a master or a record is (Office Action, paragraph 5(a)). Applicants respectfully traverse the objection.

37 CFR 1.83(a) states:

The drawing in a nonprovisional application must show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box). In addition, tables and sequence listings that are included in the specification are, except for applications filed under 35 U.S.C. 371, not permitted to be included in the drawings.

While 37 CFR 1.83(a) states that the drawings must show every feature of the invention specified in the claims, nowhere does 37 CFR 1.83(a) state that the drawings must fully explain what every feature is and does. Applicants remind the Examiner that the drawings do not exist in a vacuum and should be read in light of the specification that adequately explains what the master and record are (see, e.g., paragraphs 0036, 0041-0043, 00104-00112, and 00137 of Applicants' specification). Accordingly, Applicants request that this objection to the drawings be reconsidered and withdrawn.

In paragraph 5(b) of the Office Action, the Examiner objected to Fig. 1 because the allegedly same element "network" is allegedly identified by two different reference numbers

"100" and "140." Applicants respectfully disagree. It is perfectly clear in Fig. 1 and the description thereof, that elements 100 and 140 refer to two different networks. As explained in Applicants' specification at paragraph 0032, network 100 may include clients 110, chunk servers 120, master 130, and network 140. As explained in Applicants' specification at paragraph 0033, network 140 may include one or more types of networks to connect clients 110, chunk servers 120, and master 130. Accordingly, Applicants request that this objection to the drawings be reconsidered and withdrawn.

In paragraph 5(c) of the Office Action, the Examiner objected to Fig. 3 because it is allegedly unclear as to how many and which of the sub-elements in the figure constitute the master element. Applicants respectfully disagree. It is perfectly clear in Fig. 3 and the description thereof, that master 130 may include all of the elements shown in the figure. As explained in Applicants' specification at paragraphs 0041-0043 under the heading "EXEMPLARY MASTER CONFIGURATION," master 130 may include a bus 310, a processor 320, a main memory 330, a ROM 340, a storage device 350, one or more input devices 360, one or more output devices 370, and a communication interface 380. Accordingly, Applicants request that this objection to the drawings be reconsidered and withdrawn.

#### *OBJECTION TO THE SPECIFICATION*

In paragraph 6 of the Office Action, the Examiner objected to the specification for various alleged informalities. Applications respectfully traverse the objection.

In paragraph 6(a) of the Office Action, the Examiner indicated that Applicants are not entitled to claim priority to the two provisional application listed in paragraph 0001 and, therefore, should remove the claim for priority. Applicants traverse this objection for the reasons

given above under the heading "PRIORITY TO PROVISIONAL APPLICATIONS."

Accordingly, Applicants respectfully request that this objection to the specification be reconsidered and withdrawn.

In paragraph 6(b) of the Office Action, the Examiner indicated that the term "master" is used throughout the specification without a description or definition of what the term represents.

Applicants traverse this objection. Applicants' specification adequately explains what a master is and what a master does in, for example, paragraphs 0036 and 0041-0043. For example, under the heading in Applicants' specification entitled "EXEMPLARY MASTER CONFIGURATION," Applicants provide a detailed description of master 130. Accordingly, Applicants respectfully request that this objection to the specification be reconsidered and withdrawn.

In paragraph 6(c) of the Office Action, the Examiner indicated that the term "record" is used throughout the specification without a description or definition of what the term represents.

The Examiner alleged that the term "record" corresponds to data having particular formats in the areas of file systems and database systems (Office Action, paragraph 6(c)). Applicants respectfully disagree with the Examiner's definition of the term "record" as data having a particular data format. The term "record," as commonly known in the art is not so narrowly defined. Nevertheless, Applicants have defined the term "record" as any type or form of data in paragraph 00137 and adequately explain its use in, for example, paragraphs 00104-00112 of Applicants' specification. Applicants believe that the definition provided in paragraph 00137 is consistent with the definition commonly known in the art, but to the extent that this definition differs from the commonly known definition, Applicants desire that the definition given in

paragraph 00137 prevail. Accordingly, Applicants respectfully request that this objection to the specification be reconsidered and withdrawn.

In paragraph 6(d) of the Office Action, the Examiner alleged that the specification does not provide an explanation of what activity "prefix-compression" (paragraph 0045) represents. Applicants respectfully submit that prefix-compression is a well known technique. Literature explaining prefix-compression is readily available on the Internet. Accordingly, Applicants respectfully request that this objection to the specification be reconsidered and withdrawn.

In paragraph 6(e) of the Office Action, the Examiner alleged that the specification does not explain what "chunk type" and "64-bit value" (paragraph 0046) represent in relation to the invention. Applicants disagree. At paragraph 0046, Applicants' specification states that a chunk may be identified by a chunk handle (i.e., an identifier for the chunk -- paragraph 0035), where the chunk handle may be a 64-bit value and may encode a timestamp and possibly a chunk type. In other words, if there are multiple types of chunks, information regarding the chunk type may be included in determining the chunk handle for a chunk. The chunk handle may be 64 bits in length. Applicants are unclear as to what the confusion is here and, therefore, find it difficult to respond to the Examiner's objection. In the event that the Examiner does not reconsider and withdraw this objection to the specification, Applicants respectfully request clarification as to what the objection is.

In paragraph 6(f) of the Office Action, the Examiner objected to paragraph 00137 of the specification because:

it is impermissible to equate the terms "file", "chunk", "replica", and "record" as all referring to data, i.e., equivalent to "any type or form of data stored by the file system", this characterization is erroneous and contradictory because these terms are not synonyms,

these terms each have different meanings having differing scopes.

Applicants respectfully disagree with the Examiner's mischaracterization of Applicants' specification. Contrary to the Examiner's allegation, Applicants did not state that file, chunk, replica, and record are synonyms. Instead, Applicants specifically state that the terms are intended to refer to any type or form of data. Applicants did not state that they all refer to the same type or form of data (though it is possible for them to all refer to the same type or form of data). Instead, Applicants state that there is no restriction on the type or form of data used for file, chunk, replica, and record, as used in the specification. Accordingly, Applicants respectfully request that this objection to the specification be reconsidered and withdrawn.

In paragraph 6(g) of the Office Action, the Examiner alleged that the term "exits" at page 36, line 2, should be "exists." Applicants have amended the specification, as suggested by the Examiner. Accordingly, Applicants respectfully request that this objection to the specification be reconsidered and withdrawn.

*REJECTION UNDER 35 U.S.C. § 112, FIRST PARAGRAPH*

In paragraphs 8 and 9 of the Office Action, the Examiner rejected pending claims 1-39 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. Applicants respectfully traverse the rejection.

In paragraph 8(a) of the Office Action, the Examiner rejected claims 12, 17, 27, and 28 because these claims include the term "master" and there is allegedly inadequate written description in the disclosure to inform the reader exactly what the scope of meaning covered by the use of this term is. Applicants disagree. Applicants' specification adequately explains what a master is and what a master does in, for example, paragraphs 0036 and 0041-0043. For example,



under the heading in Applicants' specification entitled "EXEMPLARY MASTER CONFIGURATION," Applicants provide a detailed description of master 130. Accordingly, Applicants respectfully request that the rejection of claims 12, 17, 27, and 28 under 35 U.S.C. § 112, first paragraph, be reconsidered and withdrawn.

In paragraph 8(b) of the Office Action, the Examiner rejected claims 1-3, 5-11, 13-19, 21-26, and 29-39 because these claims include the term "record" and there is allegedly inadequate written description in the disclosure to inform the reader exactly what the scope of meaning covered by the use of this term is. The Examiner alleged that it is unclear as to what data component or format is covered by the term "record" since Applicants have defined "record" as any type or form of data, " which the Examiner alleged is contrary to its usual meaning. Applicants disagree.

First, Applicants disagree with the limiting definition that the Examiner gives to the term "record." Contrary to the Examiner's allegation, Applicants do not believe that the term "record," as commonly known in the art, is tied to any particular data format. Second, even if the term "record," as commonly known in the art, is tied to a particular format, Applicants have defined the term "record" as any type or form of data in paragraph 00137 of Applicants' specification.

The Examiner alleged that "while Applicant may be his own lexicographer, he is not permitted to use a word in a way that is repugnant to it's customary meaning" (Office Action, paragraph 8(b)). Applicants respectfully submit that the Examiner's allegation is directly contrary to well settled case law. MPEP 2111.01 states:

An applicant is entitled to be his or her own lexicographer and may rebut the presumption that claim terms are to be given their ordinary and customary meaning by clearly setting forth a definition of the term that is different from its ordinary and customary meaning(s).

In this case, Applicants have provided a clear definition of the term "record" as any type or form of data in paragraph 00137 of Applicants' specification. Applicants believe that this definition is consistent with the definition commonly known in the art, but to the extent that Applicants' definition differs from the commonly known definition, Applicants desire that the definition given in paragraph 00137 prevail. Accordingly, Applicants respectfully request that the rejection of claims 1-3, 5-11, 13-19, 21-26, and 29-39 under 35 U.S.C. § 112, first paragraph, be reconsidered and withdrawn.

In paragraph 9 of the Office Action, the Examiner rejected claims 1, 2, 6, 7, 9, 17, 18, 23, 32, and 33 because the Examiner alleged that "appending a record into a chunk" and "appending a record to a chunk" are different, making it unclear what is meant by the scope of the activity. Applicants note that none of the claims recite "appending a record into a chunk," contrary to the Examiner's allegation, even though the Examiner included this phrase in quotes as if quoting the language of one or more of the claims. Applicants object to the Examiner's mischaracterization of Applicants' claim terms. Nevertheless, Applicants have amended the claims to clarify the appending features. Accordingly, Applicants respectfully request that the rejection of claims 1, 2, 6, 7, 9, 17, 18, 23, 32, and 33 under 35 U.S.C. § 112, first paragraph, be reconsidered and withdrawn.

*REJECTION UNDER 35 U.S.C. § 112, SECOND PARAGRAPH*

In paragraph 11 of the Office Action, the Examiner rejected 14, 15, 29, 30, and 33 under 35 U.S.C. § 112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim that which Applicants regard as the invention. Applicants respectfully traverse

the rejection.

In paragraph 11(a) of the Office Action, the Examiner alleged that use of the term "closest" in claims 14, 15, 29, and 30 is a relative term that renders the claims indefinite. Applicants respectfully disagree, but in order to expedite prosecution, Applicants have amended claims 14, 15, 29, and 30 to define closest in terms of distance in the network topology with regard to a sender of a record or a primary replica or secondary replica that received the record from the sender. Applicants submit that amended claims 14, 15, 29, and 30 are definite. Accordingly, Applicants respectfully request that the rejection of claims 14, 15, 29, and 30 under 35 U.S.C. § 112, second paragraph, be reconsidered and withdrawn.

In paragraph 11(b) of the Office Action, the Examiner alleged that use of the term "independent" in claim 33 is an abstract term that renders the claim indefinite. Applicants respectfully disagree, but in order to expedite prosecution, Applicants have amended claim 33 to recite that the record and the record append request are received over independent paths. Applicants submit that this language is definite. Accordingly, Applicants respectfully request that the rejection of claim 33 under 35 U.S.C. § 112, second paragraph, be reconsidered and withdrawn.

*REJECTION UNDER 35 U.S.C. § 102*

In paragraph 13 of the Office Action, the Examiner rejected claim 16 under 35 U.S.C. § 102(b) as allegedly anticipated by Howard et al. Applicants respectfully traverse the rejection.

A proper rejection under 35 U.S.C. § 102 requires that a single reference teach every aspect of the claimed invention either expressly or impliedly. Any feature not directly taught must be inherently present. In other words, the identical invention must be shown in as complete

detail as contained in the claim. See M.P.E.P. § 2131. Howard et al. does not disclose or suggest the combination of features recited in claim 16.

Independent claim 16 is directed to a system for performing a record append operation. The system comprises means for receiving, by a primary server, a record append request that identifies a record to be appended to data stored by the primary server; means for appending the record to the data; means for forwarding the record append request to one or more secondary servers, the one or more secondary servers storing copies of the data; and means for appending the record to the copies of the data by the one or more secondary servers.

Howard et al. does not disclose or suggest the combination of features recited in claim 16. For example, Howard et al. does not disclose or suggest means for receiving, by a primary server, a record append request that identifies a record to be appended to data stored by the primary server and means for forwarding the record append request to one or more secondary servers, where the one or more secondary servers store copies of the data.

The Examiner alleged that Howard et al. discloses these features and cited Section 1: Introduction, Section 6.1: Volumes, and Section 6.2: Volume Movement of Howard et al. for support (Office Action, paragraph 13). Applicants respectfully disagree.

In Section 1: Introduction, Howard et al. discloses that the operating system on a workstation intercepts file system calls and forwards them to a user-level process on the workstation that caches files and stores modified copies of files back on the servers from which they came. Nowhere in this section, or elsewhere, does Howard et al. disclose or suggest a record append request, let alone means for receiving, by a primary server, a record append request that identifies a record to be appended to data stored by the primary server and means for

forwarding the record append request to one or more secondary servers, where the one or more secondary servers store copies of the data, as required by claim 16.

In Section 6.1: Volumes, Howard et al. discloses that a volume is a collection of files forming a partial subtree of the Vice namespace that resides within a single disk partition on a server and may grow or shrink in size. Nowhere in this section, or elsewhere, does Howard et al. disclose or suggest a record append request, let alone means for receiving, by a primary server, a record append request that identifies a record to be appended to data stored by the primary server and means for forwarding the record append request to one or more secondary servers, where the one or more secondary servers store copies of the data, as required by claim 16.

In Section 6.2: Volume Movement, Howard et al. discloses that balancing the available disk space and utilization on servers is accomplished by redistributing volumes among the available partitions on one or more servers. Nowhere in this section, or elsewhere, does Howard et al. disclose or suggest a record append request, let alone means for receiving, by a primary server, a record append request that identifies a record to be appended to data stored by the primary server and means for forwarding the record append request to one or more secondary servers, where the one or more secondary servers store copies of the data, as required by claim 16.

The Examiner alleged that "the claimed record append request is inherently taught since the secondary servers store the newly appended file(s) (record) and because requests are explicitly taught as being directed to the new site" (Office Action, paragraph 13). Even if, for the sake of argument, Howard et al. discloses secondary servers that store newly appended files, as alleged by the Examiner, nowhere does Howard et al. disclose or suggest means for receiving, by

a primary server, a record append request that identifies a record to be appended to data stored by the primary server and means for forwarding the record append request to one or more secondary servers, where the one or more secondary servers store copies of the data, as required by claim 16.

For at least these reasons, Applicants submit that claim 16 is not anticipated by Howard et al.

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of the application and the timely allowance of claims 1-39.

If the Examiner does not believe that all pending claims are now in condition for allowance, the Examiner is urged to contact the undersigned to expedite prosecution of this application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

HARRITY & SNYDER, L.L.P.

By: 

Paul A. Harrity  
Reg. No. 39,574

Date: 12/23/2005

11350 Random Hills Road

Suite 600  
Fairfax, Virginia 22030  
(571) 432-0800

Attachment: Copy of 1449 and InterMezzo document

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